

What is claimed is:

1. A nucleic acid molecule comprising
  - (a) a nucleotide sequence as set forth in SEQ ID NO:1, 9, or 13, which controls side-shoot formation, petal  
5 formation, abscission zone formation, or any combination thereof, or a nucleotide sequence complementary to said nucleotide sequence;
  - (b) a fragment or derivative of said nucleotide sequence or said complementary nucleotide sequence; or
  - 10 (c) a nucleotide sequence that hybridizes with said nucleotide sequence or said complementary nucleotide sequence, and which controls side-shoot formation, petal formation, abscission zone formation, or any combination thereof.
- 15 2. The nucleic acid molecule of claim 1, wherein said hybridizing nucleotide sequence hybridizes with the nucleotide sequence of SEQ ID NO:1, 9, or 13 under stringent conditions.
- 20 3. The nucleic acid molecule of claim 1, wherein the nucleotide sequence is set forth in SEQ ID NO:1, 9, or 13.
4. A polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:2, 10, or 14.
- 25 5. A vector comprising a nucleotide sequence of claim 1.

6. A transformed plant cell comprising a nucleic acid molecule of claim 1, wherein the nucleic acid molecule is integrated in the genome of the plant cell.

7. A transformed plant cell of claim 6, which can be regenerated into a seed producing plant.

8. A transformed plant tissue comprising the transformed plant cell of claim 6.

9. A plant tissue of claim 8, which can be regenerated into a seed producing plant.

10. A method for generating a plant having controlled side-shoot formation, petal formation, abscission zone formation, or any combination thereof, the method comprising

integrating at least one nucleic acid molecule of claim 1 into the genome of a plant cell or a plant tissue; and

regenerating the resulting plant cell or plant tissue into a plant.

11. The method of claim 10, wherein the nucleic acid molecule suppresses side-shoot formation, petal formation, abscission zone formation, or any combination thereof.

12. The method of claim 11, wherein the integrated nucleic acid molecule is expressed in an antisense orientation relative to an endogenous sequence that controls side-shoot formation, petal formation, abscission zone formation, or any combination thereof.

13. The method of claim 11, wherein the integrated nucleic acid molecule is expressed in a sense orientation relative to an endogenous sequence that controls side-shoot formation, petal formation, abscission zone formation, or  
5 any combination thereof.

14. The method of claim 11, wherein the nucleic acid molecule is comprised in a ribozyme.

15. The method of claim 11, wherein the nucleic acid molecule is integrated into the genomic region of a  
10 homologous endogenous gene by homologous recombination.

16. The method of claim 10, wherein the nucleic acid molecule enhances side-shoot formation, petal formation, abscission zone formation, or any combination thereof.

15 17. The method of claim 16, wherein the integrated nucleic acid molecule is expressed in a sense orientation relative to an endogenous sequence that controls side-shoot formation, petal formation, abscission zone formation, or any combination thereof.

20 18. The method of claim 10, wherein the plant is a tomato plant, a rape plant, a potato plant, or a snapdragon plant.

19. A plant obtained by the method of claim 10.

20. A seed obtained from a plant of claim 19.

21. A plant comprising a transformed plant cell of  
claim 6.

22. A seed obtained from the plant of claim 21.

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